

times more often than I saw them in Colorado. Allan and Sime observed Red-tailed Hawks over five times more often than I did in a "typical" winter month (January 1939). However, their data on Marsh Hawks agree closely with mine; they saw one bird per 20 miles traveled. Prairie Falcons appear to be less numerous in Texas; they saw one bird per 92 miles traveled in October 1939, the high month for that species.

In July, August, and early September 1963, I drove 347 miles in four trips, counting hawks on the plains in the Colorado Springs area. Swainson's Hawks averaged one per 14 miles; Sparrow Hawks, one per 20 miles; Prairie Falcons, one per 58 miles; Red-tailed Hawks, one per 69 miles; and Marsh Hawks averaged one individual per 116 miles.—JAMES H. ENDERSON, *Department of Zoology, Colorado College, Colorado Springs, Colorado, 13 April 1964.*

**A summer movement of Broad-winged Hawks.**—On 26 June 1960 we were driving eastward across the north end of Washington Island, an approximately  $5 \times 5$  mile square mass of land some 3.2 miles off the northern tip of the Door County peninsula in north-eastern Wisconsin. At about 1000 hours we noticed six hawks soaring to the north of us. These were soon joined by more, and we determined that they were Broad-winged Hawks (*Buteo platypterus*). Minutes later we saw another flock of about 20 birds moving northward along the east shore of the island.

We then drove  $1\frac{1}{2}$  miles east to Jackson Harbor at the northeast corner of the island where we found a group of about 80 Broad-winged Hawks spiraling upward. There was a constant stream of new arrivals coming from the south along the eastern shore. The altitude of these arrivals was only 50 to 150 feet, but they soon soared to heights of about 1,500 to 2,000 feet. Periodically a large flock of Broad-winged Hawks accumulated over the Jackson Harbor area. Some of the highest individuals ceased circling and glided off linearly in a north-northeast direction toward St. Martin's Island some 5 miles distant. The remainder of the birds followed in turn until the flock was stretched out in a line perhaps  $\frac{1}{4}$  to  $\frac{1}{3}$  of a mile long. When the head of this line reached a point about  $\frac{1}{2}$  mile off the northern end of the island, circling began anew, but the birds did not seem to be able to gain altitude and soon a line formed leading back to the departure point.

This performance was repeated several times, but periodically segments of flocks broke away and glided off out of sight in a westerly direction. New birds were constantly arriving from the south and rising over our observation point to form or join the soaring flocks. Most of the time the circling flight and the nearly continuous additions and excursions from the flock prohibited an accurate estimate of the number of birds involved. Our highest momentary count was 160 birds, but we suspect that this count should have included about 40 more birds.

It was our impression that the hawks were flying counterclockwise around the island, pausing at the northeast corner to attempt a flight out over the water in the direction of St. Martin's Island. At 1215 hours we counted 76 hawks over Rock Island, a small ( $1\frac{1}{2}$  square mile) island about 0.3 mile northeast of Washington Island. This group subsequently crossed the water to Washington Island. During a drive through the interior of the island at about 1230 hours we saw eight to ten flocks of 5 to 20 birds each.

It is difficult to estimate the total number of hawks involved in this movement; however, we feel that there was a minimum of 300 and probably as many as 1,000 Broad-winged Hawks over Washington Island that day. In addition, we saw two Red-tailed Hawks (*Buteo jamaicensis*), one Turkey Vulture (*Cathartes aura*), and one Swainson's Hawk (*Buteo swainsoni*). The latter was observed carefully at a distance of about 100

feet. It appeared to be in the juvenal plumage and showed no molt in the flight feathers.

We examined about 75 to 100 of the Broad-winged Hawks closely enough to determine that at least 95% of the birds were subadults. Almost all had conspicuous gaps in the tail and wings. Most individuals had molted the number 4 rectrices, and many also showed a gap in the number 1 (central pair) position. Gaps in the remiges most often appeared at about the number 4 or 5 secondaries, number 4 or 5 primaries and number 8 primaries.

We had seen no Broad-winged Hawks during the late afternoon of the previous day when we drove about 6 miles along the west shore of the island. We have visited Washington Island at about the same time in 5 of the previous 8 years and have seen no more than a few Broad-winged Hawks on any of these visits.

Broad-winged Hawks normally migrate into and through Wisconsin in late April and early May. The fall movement occurs almost entirely in the last half of September. On the basis of nests that we have observed and from data given in Bent (1937. *U. S. Natl. Mus. Bull.* 167:254), breeding individuals of this species should have young on the nest in late June in Wisconsin. Broad-winged Hawks in the juvenal plumage apparently breed only rarely (Burns, 1911. *Wilson Bull.*, 23:139-320). It would appear that this unusual movement was composed of nonbreeding individuals, at least the majority of them subadults.

The U. S. Weather Bureau at Green Bay, Wisconsin, some 80 miles SSW of Washington Island, reported WSW to SW winds of 8 to 18 knots between 0800-1300 hours on 26 June. The previous day was characterized by light westerly winds (mostly less than 10 knots), while NW winds of 15 to 20 knots predominated on 24 June. All 3 days were relatively cool and there was considerable sunshine. These conditions are conducive for the formation of updrafts and hence good flying weather for soaring birds.

The configuration of the Door County peninsula, tapering from 24 to 5 miles wide along its 70-mile length, is such that it would act as a trap for water-shy northbound or northward-drifted migrants. The shore of Lake Michigan acts as a guiding line leading northward to Door County for water-shy eastbound or eastward-drifted migrants. The weather on the day of observation and on the 2 days preceding it, while not atypical for this period, was appropriate for producing a concentration of hawks at the tip of the Door County peninsula. When the birds arrived at the straits separating Washington Island from the peninsula, they apparently had sufficient altitude to cross the 3.2 miles of open water. Once on the wooded island, the birds apparently could not gain sufficient altitude by soaring to permit further easy overwater crossings.

Since the winds were southwesterly on the day of observation, it is impossible to say whether the hawks were actively migrating northward or were being drifted northward. This observation would seem to indicate, however, that a considerable number of Broad-winged Hawks were moving in late June in northeastern Wisconsin. Perhaps many subadult nonbreeding Broad-winged Hawks migrate considerably later than the adults or possibly these individuals spend the summer doing a certain amount of wandering.—HELMUT C. MUELLER, *Dept. of Zoology, University of Wisconsin, Madison*, AND DANIEL D. BERGER, *Cedar Grove Ornithological Station, Route 1, Cedar Grove, Wisconsin*, 25 March 1964.

**Fall foods of Mourning Doves in central Virginia.**—This report summarizes the analysis of 238 crops of Mourning Doves (*Zenaidura macroura*) from the Piedmont Region of central Virginia. Crops were collected from doves killed by hunters in Sep-